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S.T Bus Ticket Automation by Scanning QR Code by using Raspberry-pi Module

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ABSTRACT

Day by day Technology has been upgrade, and it is help to sophisticate human life. The necessity of using this technology in our daily routine life is should be made worth while. With the power of technology today, we can acquire anything that we need it, in just a few clicks. Therefore, a system is introduced where the people get ticket by paying online by scanning QR code. This system use an application that select from one place to another destination place. And the system generate QR code by scanned by mobile camera, then the passenger pay ticket charge by online payment ,Internet banking like google pay, phone pay,

paytm. The whole system is modified by combining Hardware and software.

***Keywords*:** Bus Ticket Automation, Python, Tkinter, QR code, Raspberry Pi.

1. INTRODUCTION

In this paper we discuss about online ticket payment by scanning QR code with Raspberry-Pi Module. Since from earlier, people use bus transportation facility for travelling. In between we get ticket by pay direct cash. If we don't having any change or free money and the Conductor also does not have any change. Then the balance money has written backside of the ticket. If we forget to get them the the conductor has earn free extra money. Due to this reasons we has some change using new technology means use Raspberry-Pi Module. This system can be used by the users in performing online Payment by internet banking for their all business purposes. Users can use this program is already setuped on the bus and no need to install any Application or app for it.

The use of bus traveling is a large growing in Nagpur and other States. The process of buying bus ticket slip from Conductor wastes a lot of time on a daily basis or some time we don't having change or free money. The Conductor writes the remaining money back of the bus ticket receipted. Sometime regular passengers or new person also might forget to take remaining money. The conductor earns again free extra money from passengers. In between the passengers losing their own free change. So as a solution to this inconvenience, We can be used comprising of all the necessary functionalities. Subsequently, people won't dawdle for ticket booking nor will there be any chance of losing it. After this, people will be able to get ticket easily and their money will also saved.

Before getting the ticket, we have to choose the place of arrival from our designated place. After selecting the correct location , the QR code will be received. You can pay online by scanning the QR code, Such as debit/credit card, e- wallets or net banking. After receiving the money online, your ticket slip will be received from the machine. Due to this technology our spare money will be saved and we can get tickets easily.

Quick Response(QR) code is a machine readable code that can encode around 4000 characters. The information stored in the QR code would be saved in the main database via the cloud for validation purposes. A QR code scanner

will read this QR code and accordingly users information it will generate QR code and we received ticket slip by paying online payment. The digital wallet concept is included in the system will be empower the cashless transactions.

2. LITERATURE SURVEY

All researchers are research or develop and provide a generalized solution to monitor the different innovating works that are carried out by public transport. It provide date information of the system which improved efficiency of public transport record management. In existing systems, in most of the public transport system a ticket generation and issuing lengthy time taking process. If he/she loses a ticket then there is no other source or backup for the ticket, if he is caught he must pay the fine. So in this system provide payment data, timing, destination point, number of passengers and paid amount details through message.

Before ticket processing, He/She must choose the source and destination point, he/she can also choose no. of passengers, then the fare regarding his travel is displayed and when he/she enters to generate the QR code a unique code is generated. A unique QR code is generated at every time of approval.

Below information given about mobile app application, online ticket QR code Scanning, which is little bit similar above information

In 2018, the paper entitled with "Automatic ticket printing and ticket checking system for ship service using QR code" introduces a system to automate ticketing and ticket checking by enabling the passenger to enter their details. A printer would then, print the ticket and the ticket would be checked using a camera. An IR sensor was used to count the number of passengers entering the ship.

In 2017, the paper entitled "Android App for local railway ticketing using GPS and QR code" introduces a system to book local train tickets using a mobile application. At the destination, a ticket checker would scan the QR code using a mobile application and the attributes would be validated using a database stored on cloud.

In 2014, the paper entitled "Smartphone Application for railway ticket reservation and validation using mobile network" introduces a system to book railway ticket using a mobile application. The ticket checker would have a mobile

application with details of all passengers and a unique ID associated with each passenger.

In 2010, The paper-based public transport ticketing system, prevailing in the megacity of Dhaka presents extreme glitch in the system, the malignant contention among the public is corruption and above all else traffic jam. This paper really proposes a substantially more public benevolent, automated system of ticketing and also the credit exchange with the utilization of RFID based tickets.

3. Propose Topology

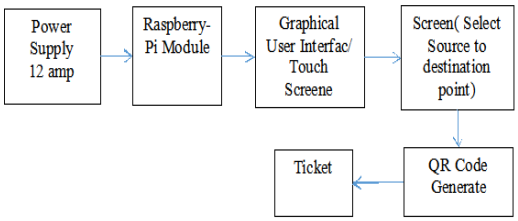


fig 3.1 block diagram of Bus Ticket Automation by Scanning QR code using Raspberry - pi module

3.1 Working

The system is very simple designed and to implement. The system need very low resources and the system will work in almost all configurations.

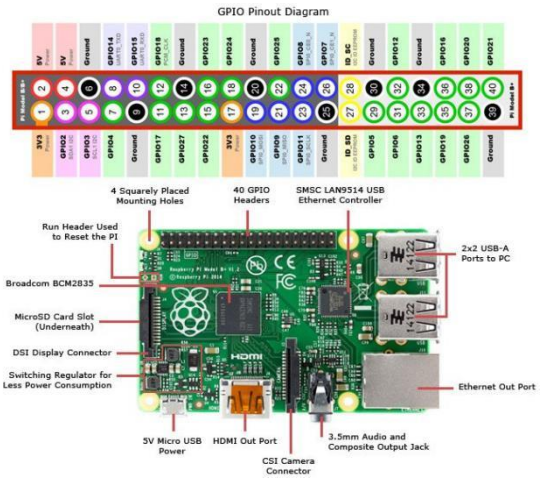
It has got following features:

- It will provide better Service.
- Ticket Selection
- QR code generator
- QR code validation
- Payment
- Ticket generate

3.2 Description of Proposed System

We will process in this system from the time ticker is issued till the QR code is scanned. In this we will issue tickets by making online payment using raspberry-pi module. We will be doing 'Tkinter' interfacing and use python programing with raspberry-pi module. Due to which our machine will work in such a way that they will select from one place to destination place, the machine show the amount to be paid and also generate QR code for online payment. By scanning the QR code, we can get the ticket after making the online payment,. Then the ticket will be received.

In this we do not have to download any mobile application. The machine has to be installed or assemble directly in the bus.



The Raspberry Pi is look like a credit card sized, single-board computer with an open-source platform that has a thriving community of its own, similar to that of the Arduino. There are a few versions of the Raspberry Pi, but the latest version, has some improved upon its predecessor in terms of both form and functionality. The Raspberry Pi Model B features:

• More GPIO
• More USB
• Micro SD
• Lower power consumption
• Better audio

The Raspberry pi GPIO pin count from 26 to 40 pins, it is increases higher-spec-variant. There are four USB 2.0 ports compared to two on the Model B. The SD card slot has replaced with a more modern push-push type micro SD slot. It consumes less power, provides better audio quality and has a cleaner form factor.

Raspberry Pi 3 Model B, need a 5V USB power supply of at least 2 amps with a micro USB cable, any standard USB keyboard and mouse, an HDMI cable and monitor screen for display, and a micro SD card . The NOOBS (New Out Of the Box Software) OS is suggest for beginners .

This pinout diagram will help to get familiar with the layout of board and get started in immersing yourself into your own passion projects.

4. Hardware requirements

1. Raspberry Pi 3

Raspberry Pi is an ARM-based credit sized computer that could be plugged into a computer monitor or TV, keyboard, and mouse to operate. It works on Raspbian operating system and has a quad-core cortex A-53 processor. It has a set of 40 GPIO pins. The available clock speed is 1.2GHz. It has four USB ports and wireless connectivity can be enabled using Bluetooth and Wi-Fi. It can be programmed using Python. An Ethernet port is provided for connecting to the Internet.

2. Touch sensor

A touch sensor which detects the physical entity (as input) and converts it to electronic format. It is a glass panel

which is a touch responsive that made up of with Resistive or Capacitive or Surface Wave Acoustic or Infrared. These touch sensor is generally placed above the display area where responsiveness can be created. Since, sensors have the electrical energy which draws the voltage drop whenever a physical object touches.

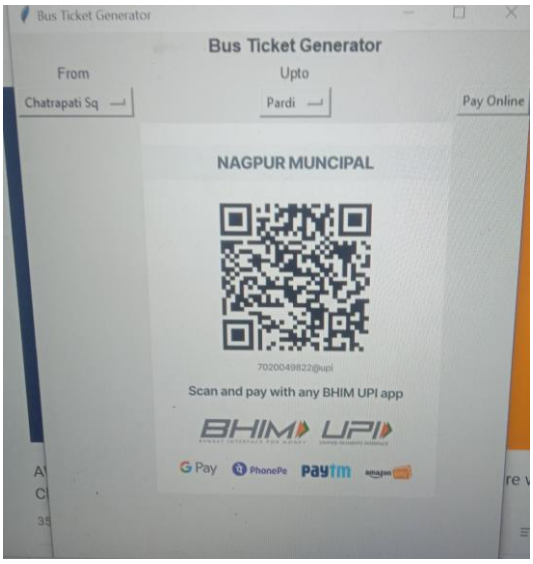
5. Software and Operating System Requirement

1. Raspbian OS

The raspberry pi uses Raspbian/Debian or any other
operating system based on Linux kernel. It requires an SD card
for booting the operating system.

3. Python 3(IDLE, Pycharm)

The programming language used to design the system is Python 3 using Python 3 IDLE. The libraries time, GPIO, qrtools of Python 3 are included to implement the System.



5. Conclusion

This project is basically classified into two parts: software, Implementation of software is used python ,Tkinterface for generate QR code.

The hardware implementation includes the interfacing of the GUI (Graphical Users Interfacing) Touch Screen.

Depending on number of passengers, and age limit, it will display total amount of bill. And the system generate QR code by scanned by mobile camera, then the passenger pay ticket charge by UPI. The proposed system is time-efficient and customer friendly. This project prevents theft and forfeiting by bus conductor.

6. References

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